Kidney International, Vol. 48 (1995), pp. 2029–2030

Presentation of the 1995 A.N. Richards Award to François Morel

KARL J. ULLRICH

François Morel was born in Geneva in 1923 as the son of a physician. He spent his childhood and received his education in that town. An early passion of his which has lasted through the years, is collecting butterflies. At school he learned Latin and Greek; however, his heart was drawn to the field of natural science. At the age of eighteen he enrolled in the Faculty of Natural Science in Geneva and two years later in the Faculty of Medicine (Table 1). Figure 1 shows François Morel as a student. His clinical years brought him some disappointment, because medicine, as it was taught at that time, was far away from a natural scientific background. After he got his Diploma in Medicine he decided then to go to Paris to continue his studies in Natural Science. Simultaneously, he was appointed as Biomedical Scientist at the Commissariat a l'Energie Atomic (CEA) and worked with Prof. Robert Courrier at the Collège de France in the Laboratory of Endocrinology and Morphology on the distribution and excretion of radionucleotides (Table 2). He wrote about that time: "This first contact with the French scientific world and the intellectual life in Paris was singularly to broaden my horizons and confirm my aspirations." The research which he accomplished during that period formed the basis for his doctoral thesis in medicine submitted in Geneva and entitled "Measurement of capillary exchange by the use of radioactive indicators" and his thesis for a doctorate in natural science, submitted at the University of Paris and entitled "Endocrine regulation of water and salt metabolism in the rat using ^{24}Na."

In 1948 he married Egletine Pieyre de Mandiargues. They have five children: four daughters and one son.

In 1953, when the Commissariat à l'Energie Atomic established a biological service in the laboratories in Saclay, François Morel was offered the leadership of a group in physiology, where he functioned as Scientific Counseler and later as Chief of the Laboratory of Physiology and Physical Chemistry. While there, he actually continued his previous scientific work (Table 2). In 1967, he became Director of the Laboratory of Cellular Physiology at the Collège de France, a position which he held until his retirement in 1993.

François Morel realized early that one cannot understand kidney function without knowing the function of the different heterogenous nephron segments, which the glomerular filtrate passes on its way to the ducts of Bellini. Therefore, he investigated the transport processes along the nephron using micropuncture techniques, mainly on desert rodents which produce highly concentrated urine (Table 2). Along this line his laboratory constructed an ultramicro-flamephotometer and introduced electron probe analysis.

Fig. 1.

Later, in the mid-seventies, he and his collaborators microdissected the different nephron segments and studied the site and mode of hormone action of: transport ATPase, metabolic events, like production of CO_2, prostaglandins, phosphoinositides, arginine, urea and osmolytes. Last and not least, he investigated free intracellular Ca^{2+} and Na^+/Ca^{2+} exchange along the nephron.

Thus, François Morel (Fig. 2) has contributed many mosaic stones which compose our present picture of kidney function. He has received many honors (Table 3) which now include the A.N. Richards Award. Speaking for the audience, I congratulate him and wish him good luck for the future.

Table 1. Overview of François Morel's career

1944	Diploma, Faculty of Natural Science, Geneva, Switzerland
1948	Swiss Medical Diploma, Faculty of Medicine, Geneva, Switzerland
1948–1953	Medical Biologist, Commissariat à l'Energie Atomic (CEA), working with Prof. Robert Courrier, Laboratory of Endocrinology and Experimental Morphology, Collège de France, Saclay, France
1950	Doctor of Medicine, Faculty of Medicine, Geneva, Switzerland
1953	Doctor of Sciences, Faculty of Sciences, Paris, France
1953	Medical Biologist at the CEA, Saclay, France
1959	Scientific Counselor at the CEA, Saclay, France
1963	Chief of the Laboratory of Physiology and Physical Chemistry in the Department of Biology, CEA, Saclay, France
1967–1993	Professor at the Collège de France, Director of the Laboratory of Cellular Physiology, Paris, France

Table 2. Themes of investigation

Distribution of radionucleotides, action of neurohypophyseal hormones
Functional segmentation of the nephron: Transport (micropuncture) metabolism, hormone action (microdissected tubules)

	Saclay	
Courrier Simon Marois Guinnebault	1948–1955	Distribution and excretion of ^{24}Na, ^{42}K, ^{131}I and ^{131}I-thyroxin, ^{35}S-sulfate, ^{35}S-taurine
Maetz Jard	1958–1972	Na^+ transport in amphibian skin: action of aldosterone, different neurohypophyseal hormones, cAMP, adrenergic agonist
Amiel Gottschalk Lechene	1960–1966	Micropuncture, microinjection: water exchange in medullary counter current system; tubular permeability
	Collège de France	
De Rouffignac Bergeron	1966	Transport along the nephron (micropuncture on desert rodents) water, electrolytes, urea, amino acids, phosphate, calcium
Lucarain	1967	Ultramicro-flamephotometer
Roinel Murayama Grimellec Kuntzinger, Amiel	1969	Electron probe analysis
Imbert Chabardes Marchetti Butlen Simmons	1975–1994	Functional segmentation of the nephron (microdissected nephron segments) Site of hormone action: ADH, PTH, catecholamine, calcitonin, kallikrein, glucagon, VIP, ANP, insulin
Doucet, Katz	1979	Na^+/K^+-ATPase, site of adrenocorticoid action
Hus-Citharel Levillain Bankir Rajerson, Guder	1986	Production of CO_2, prostaglandins, phosphoinositides, arginine, urea, osmolytes
Taniguchi	1990	Cytosolic free calcium, Na^+/Ca^{2+} exchange

Fig. 2.

Table 3. Honors

1974	Doctor *Honoris Causa,* University of Geneva
1979	Homer Smith Award of the American Heart Association
1980	French-American Richard Lounsbery Award
1987	Doctor *Honoris Causa,* University of Lausanne
1989	Volhard Medaille der Gesellschaft für Nephrologie
1989	Doctor *Honoris Causa,* University of Montreal
1994	Pavlov Medaille, Russian Academy of Science Officer dans l'Ordre de la Légion d'Honneur